Digital Libraries in Malaysia: Problems Faced and Factors for Future Growth

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Abstract: *The article is based on the doctoral research findings from both the questionnaire (223 respondents) and interview sessions with 36 libraries (9 academic, 21 special and 6·state/public libraries). It was found that Malaysian libraries were facing various kinds of problems. Top in the list was the lack of Information Technology (IT) personnel; followed by the lack of budget, lack of digital library initiatives (DLIs) and ICT training, renewal of online subscriptions, lack of and under utilization of digital resources, and lack of suitable integrated library system. Digital library related problems were lack of staff (professional, support and IT), absence of a blueprint and National Information Infrastructure (NII) policy, digital project was too expensive which could be due to budget constrain, lack of role model and problems related to Copyright Act clearance. As the outcome of the findings, a total of eleven factors for future growth have been proposed.*

Abstract: *Digital Libraries, Malaysia Academic Libraries, Special Libraries, Public Libraries and Copyright Act*

INTRODUCTION

The first emerging sign of digital library development from the research was that 36% of the libraries have declared to become hybrid type, having some components of their collection digitized and was providing some form of online services. The remaining 55% was print-based and only 1.3% declared to be digital. Perhaps the phrase from *MALMARC* (1978) to *PERDANA* (1999) might be able to give a glimpse as the degree of digital library development that has taken place in Malaysia. The force behind to the endeavor has been the National Library of Malaysia (PNM), earlier working strategically with the Multimedia Development Corporation, state/public libraries, and selected academic and special libraries. Of recent development, PNM has been working on the *U-Library* project, operational July 2010, with a new anchor partner – the Malaysian Communications and Multimedia Commission (MCMC) in an attempt to bring *PERDANA* project to a higher level.

PROBLEMS FACED

This research has identified problems faced from two different perspectives. One was the general kinds of problems and second was the digital library related problems. It would be difficult to progress if not supported by adequate facilities, budget, training, management support and skilled human resource. It was found that only 54% of the libraries have installed an integrated library systems, meaning 46% were still without library system. It would be hard to imagine that in the cyber era, where the Internet has changed predominantly the way we live, there were still libraries without library system. Therefore nineteen different kinds of general library problems have been asked in the questionnaire and these were (Fig. 1) what the research has unfolded:-
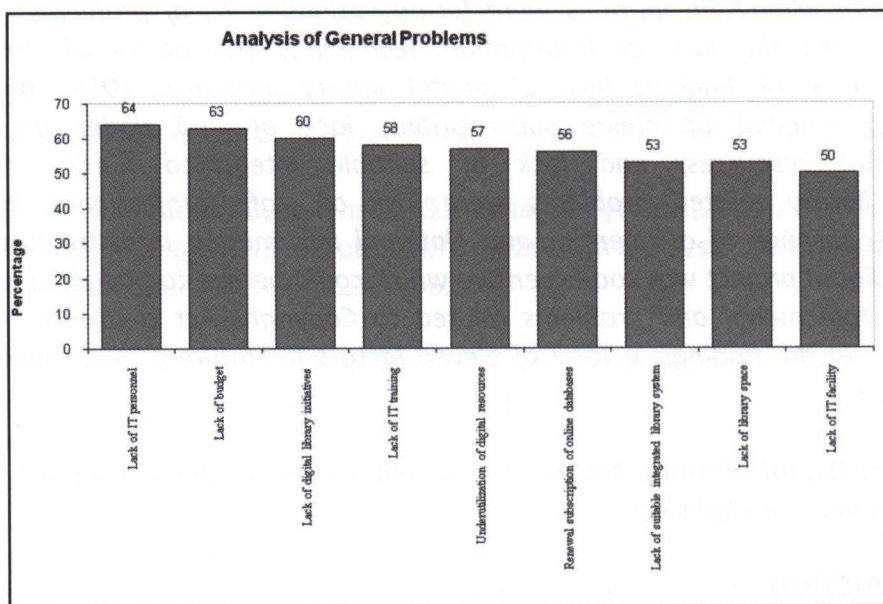
Analysis of General Problems

Figure 1: Analysis of General Problems

Lack of IT personnel has been identified as the most problematic and this was in fact very crucial to digital library development that was supposed to be IT dependent and IT driven. This has resulted in some form of dependence on IT unit of the parents' organizations for technical support (56%) and also the reason why heads of libraries (96%) unanimously agreed that librarians must embrace digital technology. Webb (2000) reiterated that digitization projects were complex and the cost was always more than you expected and it required a significant amount of investment (Chowdhury and Chowdhury, 2003). But as the research has found, the lack of budget came next after the lack of IT personnel. Only 5% of the respondents had budget of more than 2 million (Fig.2) and funding from non-governmental sector for digital library development was not yet a norm in Malaysia. Unlike in the United States, bodies like NASA and FBI were also involved

in the sponsoring of digital library programs. The only known Malaysian non-governmental sector that has been sponsoring part of the maintenance costs of Universiti Kebangsaan Malaysia Medical Virtual Library has stopped doing so at the end of 2008 for reason they only knew (Maimunah, 2008).
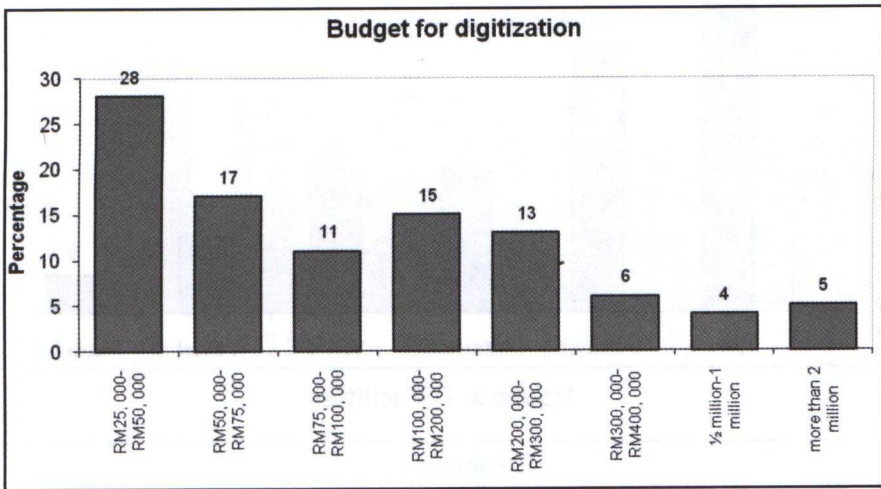

Figure 2: Budget for Digitization

The problems of under utilization of digital resources and renewal subscription of online databases were inter-related. The underutilization of digital resources could stem from two reasons. Its either users were not familiar with digital resources or the new services have not been promoted. With limited budget, renewal would be a problem if the subscriptions remained underutilized. Together with the lack of digital library initiatives, lack of IT training, lack of suitable integrated library system, lack of library space and lack of IT facilities (Fig. 3 and 4), digital library development would be affected. The fact that only 22% have Internet access was indeed surprising and disappointing. For the other 78% of the libraries, there would be no virtual access and services and definitely digital library would be out of question. Only 83% of the respondent did possess PCs in varying numbers and the biggest percentage was within the range of 1-5. This was also not a good indicator for digital library development. The availability of PCs meant the possibility of online services.
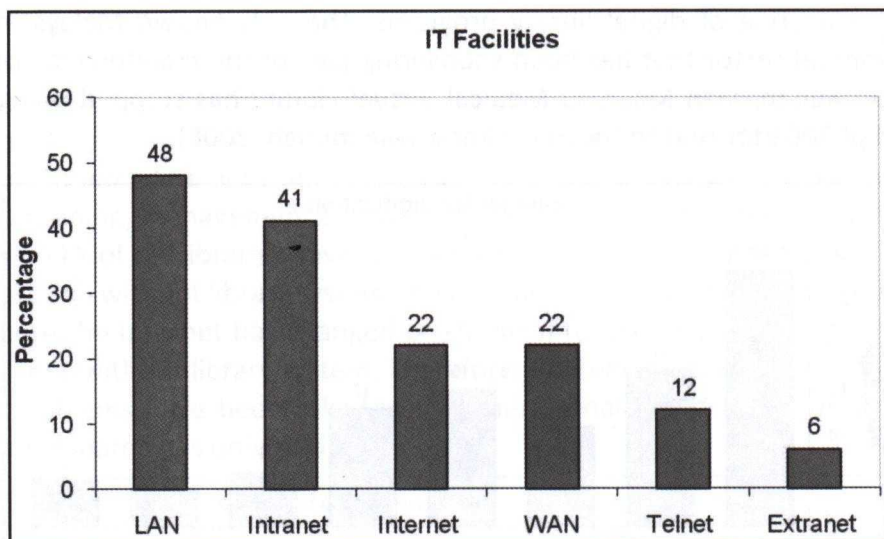
IT Facilities

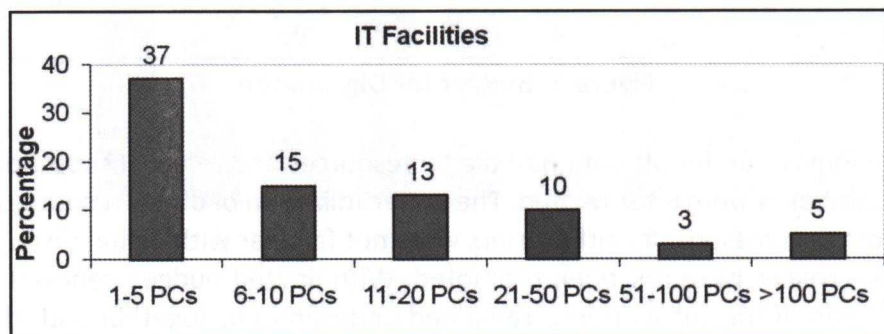**Figure 3: IT Facilities**

IT Facilities

Figure 4: IT Facilities

ICT training was also minimal where most of the training was in the areas of application software (72%), introduction to computers (66%), World Wide Web (51%) and web design (40%). What needed most were training on developing and maintaining database management systems, operating system and content management. The librarians were trained both in-house and externally (42%), in-house only (24%) and self-trained (23%). Training duration was mainly less than 1 week (70%) and definitely this was just introductory courses.

Digitization Related Problems

The research found that only 29% of the respondents have started some kind of digitizing works and 71% have not done anything as yet, which is again not a good indicator. The questionnaire has posted 18 possible digitization related problems and 6 items have been classified as the top most problems (Fig. 5). The finding on staff shortage for digitization works (digitization project done with existing staff)

further intensified earlier finding that stated lack of IT personnel (64%) as one of the general problems faced by Malaysian libraries. Cost factor (60%) also bore similar weightage as lack of budget (63%).
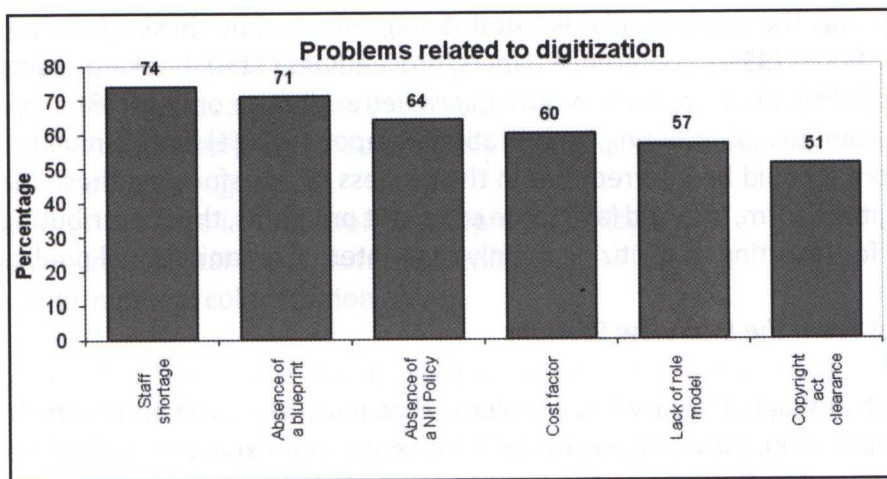

Figure 5: Problems Related to Digitization

From the field visits to 38 libraries that the researcher did for the qualitative data, it could be seen that all of these libraries were planning and doing their own digitizing works independently, at their own pace depending on whatever resources they had at their disposal. There were not any concerted or collaborative efforts at any level among the libraries that could be the platform for some kind of cooperative work, except those spearheaded by PNM or PERPUN (Persidangan Perpustakaan Universiti dan Perpustakaan Negara Malaysia). The involvement of the respondents with digital library projects under PNM was also very small i.e. only 11% and 89% have never been involved. They did communicate through the invisible college but not through well chartered and published guidelines.

This observation has been further justified when 71% of the respondents felt that the absence of a blueprint as a guideline for digital library development as one of the major problems faced, followed by the absence of National Information Infrastructure (NII) policy (64%). Many felt that policy with respect to NII should be formulated by the authority concerned to help putting in place the much needed basic information infrastructure to keep regulate digital library development. Lack of role model (57%) where the libraries could learn, emulate and evaluate before starting their own digital library works was also lacking. Due to the lack of published literature on Malaysian DLIs, no one knew what the others were doing and as such nothing could be learned from those who had initially started digitization works. This lack of common official platform, called for an urgent extensive collaborative digital library projects among all Malaysian libraries and other related national information agencies.

The last problem identified was Copyright Act Clearance (51%). There was a co-relation between this problem and materials digitized by libraries. The research revealed that information surrogate was one of the most popular methods chosen by Malaysian libraries as a short-cut to the formation of a digital library. Newspaper cuttings was the most widely digitized (56%), followed by theses / dissertations, articles, books (33%), conference papers/proceedings (31%), booklets/pamphlets/leaflets (30%), photo collection (28%), newsletters/house organs (23%), speeches (22%), minutes of meeting/organizational reports (20%) and circulars (19%). Therefore it could be inferred that in the process of transforming these materials into digitized form, they did face some copyright problems, thus contributing to the reason for resorting to digitizing mainly their internal organizational publications.

Findings From the Interview Sessions

Some of the digital library key problems that have been voiced and highlighted were leadership, lack of background knowledge and exposure, lack of technical expertise and staff shortage. Other problems included budget, over dependent on PNM for DLIs, collaboration, expensive user license, monitoring the utilization of e-resources, digital ownership, digital library training, time factor, the promotion of online services, ICT facilities and infrastructure and the need for a national digital library blueprint. The interview session with the Director of the PERDANA Service Division of PNM has resulted in similar answers with a few additional points raised such as the importance of public awareness, lack of coordination, absence of a dedicated team and a segmented library management system between state libraries.

Even though there have been various kinds of problems as have been identified, it could be said that Malaysian libraries have accepted the concept of digital library, internalizing and digesting it, and conceptualizing it into plans that would see more DLIs in the near future. The basic foundation of digital library has been laid by the MALMARC Project 1978, followed by the Jaringan Ilmu 1994, Connected Learning House 1999, International Islamic Digital Library 2003 and PERDANA /MyLib 1999-2015 projects, but more impetus were needed to bring digital library development to a greater height due to the facts that generally as of 2004:

- Some libraries were still run by non professional librarian
- Lack of staff especially technical expertise
- Modest ICT infrastructure; only 54% has installed library system and only 5% have more than 100 PCs.
- High dependency on IT Unit of parents' organizations
- Print materials still dominates
- The introduction of basic online library services (OPAC, circulation, website services, reservation, registration, reference and SDI)

- Digitized materials were mainly press cuttings and organizational publications
- Minimum ICT training
- Only 29% have done digitization works
- Only 11% have been involved with PERDANA Project
- Dominated by private domain
- Only 1.3% have budget more than RM2 million
- Digitization related problems were basic in nature (staff, blueprint, NII, budget, role model, copyright act)
- Not much change in collection development policy
- No concrete digital library future planning
- No international collaboration as yet

The scarce of some of the above basic necessities were not good indicators for national digital library development. As Ali (2003) suggested, the three key components which constitute the theoretical framework underlying DLIs were people, information resources and technology. These three components were some of the problems faced by Malaysian libraries, as the research has unfolded.

FACTORS FOR FUTURE GROWTH

Digital library development requires every sector – government and non government bodies, to collaborate in promoting its creation and usage. Basic infrastructure for connectivity and interoperability, including funding, human resource, training, and leadership must be in place to support more digitization projects. Digital library research and extensive knowledge were important to help coordinate and consolidate efforts toward planning, organizing, establishing, creating and servicing digital library development for the country.

As for the factors for future growth, the possibility of extending digital library programs to as many libraries as possible should be PNM's main agenda, strengthening its national digital library planning in terms of central leadership in DLIs and human resource development/digital expertise. Other growth factors would be ICT training and exposures, the establishments of a digital library special commission and digital library research center, blueprint, budget increase, publishers and e-publishing, digital content development, legal framework for digital library development, citizens' awareness, broadband facility and ICT infrastructure and consolidation of the national information infrastructure, support from policy makers, standard governance, formulation of digital library policy and adoption of digital library standards, and extensive collaboration especially of the national information agencies.

The digital library development worldwide has somehow enforced Malaysian librarians to change their course of actions into becoming more receptive to the provision of online services. Libraries were no longer playing the role as intermediaries as they were no longer the one stop information center that they used to be. The disintermediation of function must be dealt with seriously in the context of digital library perspective; otherwise libraries position would be at stake. Based on the collected data, where there has been some convergence of findings, therefore these were the recommended factors for future growth:

The Formation of a National Commission on Digital Library Development

The National Commission on Digital Library Development (NCDLD) framework was proposed and created based on the elements that have been put forward, suggested and thought of by the interviewees on the basis of functionalities, relevancy, expertise, collaboration and cooperation that could contribute to the whole spectrum of digital library development in Malaysia. It is supposed to help tackle the problem of collaboration, the need to enable a more central digital library effort, focused and coordinated planning be developed, based on strategic alliance with information related agencies and other organizations as shown in Appendix 1. It would bring the related information agencies/organizations under one roof to spearhead and organize DLIs through the formation of two separate dedicated digital library teams, handling digital library projects and technical aspects. The division of teams with clear functions of activities would be streamlined for the production of knowledge portals. PNM has been doing this to some extent but due to some constraints such as human resource, expertise, budget and time factor as it is also involved in the provision of public library services, so the existence of a central body would help accelerate Malaysian digital library development much faster and in a proper, guided and planned manner, in a much wider scale.

Blueprint for Digital Library

The creation of a digital library blueprint that would serve as a common guideline. It may contain the following propositions:
   a) The definition and elements of a digital library by Malaysian standards.
   b) The procedures for information surrogates, including some of the best practices in terms of selection of materials, methods of surrogating, selection of storage media and a choice between public and private domain.
   c) The creation of local digital contents as an important component if they wish to qualify under the categorization of a digital library.
   d) The availability and range of online services that is operational.
   e) Elements for success such as management support, technical expertise, collaboration, global access, resource sharing and budget requirement.

National Information Infrastructure (NII)

The creation of the NII be given priority, emphasizing on the provision of broadband facility on a much wider national scale. This factor should be able to help solved ICT related problems of LAN, Intranet, Internet, WAN, Telnet, Extranet, and the number of PCs owned.

Budget Increase

There should be an appropriate budget increase to help facilitate digital library planning and digitization works. It should be in tandem with the other related factors for future growth such as the establishment of digital library research center, training of professional librarians, database subscriptions, the purchase of all the necessary hardware and software, the acquisition of suitable infrastructure, the provision of online services and operations and also budget for maintenance purposes.

Human Resource and ICT Training for Professional Librarians

Human resource management/development and leadership for digital libraries are indeed important factors for future growth. Libraries should be headed by the professional librarians and ICT training for them should be intensified. Human resource development through proper training is important to support digital library technology implementation and to lessen the over dependent on the computer science professionals.

Collaboration: Libraries, Archives and Museum

The development of digital libraries saw the need for cooperation and collaboration among libraries and information centers becoming more important than ever as exemplified in the west. In Malaysia this is severely lacking. Collaboration in DLIs, particularly among the national information agencies vis-à-vis PNM, the National Archive of Malaysia and the National Museum of Malaysia be given serious consideration. Collaboration is one of the fundamental aspect of DLIs and in supporting virtual re-unification of digital library resources.

National Digital Library Policy and Services

Digital library policy and services is as important as the creation of a digital library blueprint. Both are to be used as a form of guidance to streamline all activities that relates to digital libraries. There should be digital library policy on acquisition, born digital materials, information surrogates, reference service, domain types and

anything that would serve as national standard guidelines. That the formulation of a national digital library policy and services be drafted to supplement the blueprint on digital library proposed earlier.

Copyright and Intellectual Property Right

There is a need for legal framework for digital library development that includes the revision and amendments to the copyright act be done to ease digitization works and more importantly to include the legal deposit of born digital materials.

Education System

The factor for growth based on education system is meant for long term planning and in capitalizing the fact that the government has introduced the Smart School Concept under the program of Multimedia Super Corridor (MSC). It is about the introduction of e-learning at early age and utilizing the schools' resource centers to the fullest. As it involves policy matters, definitely it needs the collaboration of several other government agencies in particular the Educational Technology Division and the Ministry of Education.

The Establishment of a Digital Library Research Center

A digital library research center be established by any related organizations that possess adequate technical expertise. This is crucial because a digital library research center can provide leadership, bringing a pool of expertise and conduct research that may see the production of many DLIs, prototypes and digital library model.

Publishers and E-Publishing

E-publishing is synonymous with e-books and e-journals, two important components of digital libraries. The presence of these two elements is associated with libraries' most popular online services and has resulted in the increase of online subscription of commercial databases to the extent that libraries now provide access to materials that they do not owned. Digital materials form the basis for digital library services where universal and remote access is fundamental to virtual service. Malaysian publishers should therefore consider seriously adopting e-publishing to support and spearhead further digital library development in Malaysia.

CONCLUSION

Those eleven factors for digital library growth as proposed by the interviewees were the elements that they thought would accelerate further whatever that have been achieved so far in relation to digitization works. As the literature review has revealed, particularly in the United States and United Kingdom, digital library projects were abundance and the topic has gained great attention from the government and the community. Foreign digital library literatures were discussing about post digitization era. They have done many DLIs, so the next step they were talking about multi-lingual digital library (MLDL), open repository concept, integration of e-resources, handle system or digital unique identifiers, interoperability, metadata, intellectual property right, virtual unification of resources, digital preservation, democratization of information, user authorization and authentication, digital archiving, digital policy management and digital rights management. Private and government funding were abundance, there were plenty of avenues for intellectual discourse and collaboration has been widespread between the private sectors, the governments, libraries, museums and archives, not only locally but also internationally.

These scenarios should be able to provide some provocative thoughts: Library of Congress's American Memory Project has digitized 9 million items as of June 2007; Britons may visit their museum virtually through http:www.24hourmuseum. org.uk/; Australia has demonstrated the concept of virtual reunification of e-resources through World Treasures http://www.nla.gov.au/worldtreasures/ thml; New Zealand has contributed to world's digital library development through the Greenstone software; India, China and the United States were collaboratively working on the Million Book Project; France's Gallica, was offering 90,000 volumes in image format, 1200 volumes in searchable text format, 500 sound recordings and 80,000 digitized still images; The Koninklijke Bibliotheek, of Netherlands was planning mass digitization from 2007 – 2011, putting online 8 million pages from colonial Dutch daily newspapers; Europeana, started in July 2007 had initially 2 million digital collections of texts, images, audio files and movies and the number is projected to reach 6 million items by 2010; the Portal of the Association of Computing Machinery (ACM) has 54,000 online articles from 30 journals it ever published; European Commission's DLIs under the EU's i2010 strategy, aimed to make over the next 5 years, 6 million resources accessible through the European Digital Library web portal; the NBdigital of Norway that started digitization of its first book in March 2006, but by Spring 2009, the digital collection was comprised 90,000 books, 200,000 newspapers, 3100 hours of film, 250,000 hours of radio broadcast, 420,000 photographs and 23,000 manuscripts (Takle, 2009); Dibrary (www.dibrary.net) – the digital library of the National Library of Korea was launched in May 2009, offering more than 116 million knowledge information resources

that have been collected at the Dibrary Portal. On top of this, the World Digital Library (http://www.worlddigitallibrary.org/project/english) was launched on 21 April 2009. The National Library of Malaysia has digitized 600,000 pages as at September 2008.

In a nutshell, Malaysian libraries were moving toward digital library development, at different phases and levels, despite facing problems of various natures described earlier. While accepting *PERDANA* Project as the national digital library program, they have expressed high hopes for the National Library of Malaysia to provide a more coherent leadership and playing a bigger role in initiating DLIs both locally and internationally. They also expected the National Library of Malaysia to establish effective collaborative efforts by working together with the Malaysian National Archive and the National Museum.

To conclude, digital library development in Malaysia needs a lot more impetus to stand on equal footing with her western counterparts as we were developing areas that were done by them about 20 years ago. With the right incentives and directions, taking into considerations the factors for growth that have been voiced out, the potential is there for Malaysian libraries to move forward. Given the right assistance, input and impetus, and tackling the known existing problems, Malaysian libraries might achieve the same directions of digital library development as their western counterparts, in no time.

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